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09/987,374	11/14/2001	Toshinori Tanaka	Q67313	6921

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EXAMINER

PEREZ, GUILLERMO

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Please find below and/or attached an Office communication concerning this application or proceeding.



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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 10

Application Number: 09/987,374
Filing Date: November 14, 2001
Appellant(s): TANAKA ET AL.

Mark R. Woodall
For Appellant

MAILED

DEC 1 8 2002

GROUP 2800

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 24, 2002.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

No amendment after final has been filed.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

The rejection of claims 1-5 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

4,532,449	AOKI	7-1985
2,632,125	M. J. BALDWIN	3-1953
4,635,349	RABE	1-1987

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (U. S. Pat. No. 4,532,449) in view of M. J. Baldwin (U. S. Pat. No. 2,632,125).

Aoki discloses an armature for a dynamo-electric machine comprising:

- a shaft (4)
- a core (8), secured to the shaft (4), having a plurality of slots extending in an axial direction formed on an outer circumferential surface of the core (8)
- a coil (1i) comprising a plurality of coil portions (1) formed by winding wires a plurality of turns around a pair of the slots separated by a predetermined number of the slots and offsetting each of the coil portions (1) in the circumferential direction of the core (8), wherein at least one pair of adjacent coil portions (1) share a common one of the slots
- a commutator (10) secured to the shaft (4), the commutator (10) comprising a plurality of segments

However, Aoki does not disclose a plurality of equalizing connectors for permanently electrically connecting pairs of the segments that should have the same

electric potential, so that each of pairs of the coil portions that should have the same electric potential has a substantially equal electrical potential.

M. J. Baldwin discloses a plurality of equalizing connectors (25, 26, 16) for permanently electrically connecting pairs of the segments (1-7) that should have the same electric potential, so that each of pairs of the coil portions (9, 11) that should have the same electric potential has a substantially equal electrical potential. M. J. Baldwin's invention has the purpose of reducing the unequal voltages that may occur in the winding, this unequal voltages cause circulating currents through the windings and through the brushes, which cause unnecessary heating of the coils and brushes, tending to produce poor commutation and reduce the overall efficiency of the machine.

It would have been obvious at the time the invention was made to modify the armature for a dynamo-electric machine of Aoki and provide it with a plurality of equalizing connectors as disclosed by M. J. Baldwin for the purpose of reducing the unequal voltages that may occur in the winding, this unequal voltages cause circulating currents through the windings and through the brushes, which cause unnecessary heating of the coils and brushes, tending to produce poor commutation and reduce the overall efficiency of the machine.

Claims 2 to 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki in view of M. J. Baldwin and further in view of Rabe (U. S. Pat. No. 4,635,349).

Aoki and M. J. Baldwin disclose an armature for a dynamo-electric machine as disclose on item 1 above. However, neither Aoki nor M. J. Baldwin disclose that the number of turns of the wires in the coil portions in an initial lap is different from the

number of turns of the wires in subsequent laps. Neither Aoki nor M. J. Baldwin disclose that the number of vacant slots between adjacent the coil portions is non uniform.

Neither Aoki nor M. J. Baldwin disclose that the number of turns of the wires in the coil portions in the initial lap is less than the number of turns of the wires in the coil portions in the subsequent laps. Neither Aoki nor M. J. Baldwin disclose that the number of turns of the wires in the coil portions in the initial lap is greater than the number of turns of the wires in the coil portions in the subsequent laps.

Rabe discloses that the number of turns of the wires in the coil portions in an initial lap is different from the number of turns of the wires in subsequent laps. Rabe discloses that a number of vacant slots between adjacent coil portions is non-uniform. Rabe discloses that the number of turns of the wires in the coil portions in the initial lap is less than the number of turns of the wires in the coil portions in the subsequent laps. Rabe discloses that the number of turns of the wires in the coil portions in the initial lap is greater than the number of turns of the wires in the coil portions in the subsequent laps (figures 3 to 8). Rabe's invention has the purpose of improving the utilization of the stator core slot area.

It would have been obvious at the time the invention was made to modify the armature of Aoki and provide it with the number of turns of wires in the coil portions configurations, and the number of vacant slots between adjacent the coil portions configuration as disclosed by Rabe for the purpose of maximizing the use of the slot area in the armature thus making possible reduction in the size of the motor without reducing the output power of the motor.

Referring to claims 1-5, no patentable weight has been given to the method of manufacturing limitations (i. e. "a plurality of coil portions are formed simultaneously") since "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

(11) Response to Argument

Regarding the Applicants' request to consider the Information Disclosure Statement (IDS) submitted on November 14, 2001, a copy of the initialed IDS is included with this communication.

Claim 1 is unpatentable under 35 U.S.C. 103(a) over Aoki in view of M. J. Baldwin; and claims 2 to 5 are unpatentable under 35 U.S.C. 103(a) over Aoki in view of M. J. Baldwin and further in view of Rabe for the reasons stated below.

Applicants arguments are directed to the difference between the method by which the coils in Aoki are made and the method by which the coils in the Applicants' claimed invention are made.

The Applicants argue that the coils in the claimed invention are formed by simultaneously winding wires, whereas Aoki discloses that the coils are formed sequentially. Aoki does not disclose the method of manufacturing by which the coil arrangement is formed. In other words, Aoki neither discloses that the coils are formed

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sequentially nor simultaneously. What is being disclosed in Aoki is *"a coil (I_i) comprising a plurality of coil portions (I) formed by winding wires a plurality of turns around a pair of the slots separated by a predetermined number of the slots and offsetting each of the coil portions (I) in the circumferential direction of the core (8), wherein at least one pair of adjacent coil portions (I) share a common one of the slots"*, as stated in the Final Rejection. Aoki discloses the structural limitations of the end product claimed by the Applicants.

It has been pointed out that throughout the prosecution that the method of manufacturing the coils in the prior art may be different from the method being claimed, but the end product being claimed by the Applicants is disclosed by Aoki and Baldwin. As stated in the Final Rejection: *"no patentable weight has been given to the method of manufacturing limitations (i. e. "a plurality of coil portions are formed simultaneously") since "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process."* In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)". Coils being formed simultaneously is one method by which the coils arrangement may be manufactured, but the claimed end product is not different from the end product in the prior art of record.

It must also be noted that Baldwin describes the formation of coils in column 1, line 20 through column 2, line 9. Specifically, column 1, lines 40-55 describe the formation of multiplex windings (two winding paths) on the same slots of the armature. Baldwin describes that a multiplex winding is placed on 50 slots of the armature and that another multiplex winding is placed on the other 50 slots of the armature. Baldwin discloses coil portions being formed simultaneously by first placing multiplex winding (two winding paths or more) on a first number of slots of the armature. Baldwin was cited in the Final Rejection as prior art for claims 1-5.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, M. J. Baldwin teaches that the equalizers reduce the unequal voltages that may occur in the winding. These unequal voltages cause circulating currents through the windings and through the brushes, which cause unnecessary heating of the coils and brushes, tending to produce poor commutation and reduce the overall efficiency of the machine. The machine of Aoki has the same brush, commutator, and armature winding structure configuration as in Baldwin. The unnecessary heating of the coils and brushes, which will reduce the efficiency of the

machine is also a problem in the structurally equal embodiment of Aoki. Thus, the provision of the equalizing connectors to the machine in Aoki in order to improve efficiency would have been an obvious modification to one having ordinary skill in the art at the time the invention was made.

The Applicants argue that the refusal to give patentable weight to the recitation “simultaneously winding” is improper and that claims 1-5 are not product by process claims, but apparatus claims with functional limitations.

Claims 1-3 are apparatus (or product claims), which disclose structural limitations of the end product and also disclose a specific step by which the end product was achieved. Forming the coils simultaneously is not a functional limitation of the claimed apparatus. Forming the coils simultaneously would be the function of the equipment used to manufacture the end product. However, the equipment used to manufacture the end product is not part of claims 1-5.

A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). In re Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971). Thus, a machine to manufacture the coils of the armature may function by simultaneously winding the coils on the armature. An armature with coils as claimed functions to provide torque to an exterior load when it is subjected to a magnetic field from the magnetic poles of a motor stator.

Interpreting the manufacturing step in claims 1-5 as a function of the claimed apparatus is improper.

Section 2173.05(p) of the M.P.E.P. states that a "claim to a device, apparatus, manufacture, or composition of matter may contain a reference to the process in which it is intended to be used without being objectionable under 35 U.S.C. 112, second paragraph, so long as it is clear that the claim is directed to the product and not the process". Claims 1-5 are directed to the product, even though contain the manufacturing limitation "simultaneously winding".

The Examiner therefore believes that Aoki in view of M. J. Baldwin, and further in view of Rabe teach the claimed structural limitations and that the arguments presented by the Applicants are not considered to rebut the prima facie case of obviousness. The claims are still considered to be unpatentable.

For the reasons stated above, it is believed that the rejection should be sustained. For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

Guillermo Perez
December 13, 2002

Conferees

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